Khabibah Puspa Dela 2019.**Pemodelan dan Prediksi Harga Beli Minyak *West Texas Intermediate* (WTI) Dengan Pendekatan Fungsi Transfer *Multi Input***. Skripsi ini dibimbing oleh Drs. H. Sediono, M.Si dan Ir. Ir. Elly Ana,M.Si., Prodi S1-Statistika, Departemen Matematika, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya

ABSTRAK

Keberadaan minyak bumi mampu mempengaruhi tingkat ekonomi suatu negara hal ini disebabkan karena, minyak bumi yang melimpah dapat diekspor ke negara lain sehingga mampu meningkatkan pendapatan per kapita pada suatu negara. Harga minyak mentah dunia diukur dengan harga spot pasar minyak dunia, umumnya harga minyak yang digunakan menjadi harga standar dunia adalah *West Texas Intermediate* (WTI). Fluktuasi harga minyak WTI beserta beberapa faktor yang mempengaruhi yaitu ekspor dan impor migas selalu dianggap sebagai barometer ekonomi di seluruh dunia, sehingga setiap perubahan harga minyak selalu menjadi isu panas untuk dibahas dalam lingkaran politik dan ekonomi di setiap negara.Tujuan dari penelitian ini adalah untuk mengintrepertasikan gambaran umum variabel-variabel yang berkaitan dengan harga beli minyak mentah menurut *West Texas Intermediate* (WTI) berdasarkan analisis statistika deskriptif, mengestimasi model harga beli minyak mentah menurut *West Texas Intermediate* (WTI) berdasarkan fungsi tranfer *multi input* untuk mendapatkan model yang terbaik dalamperamalan serta menganalisis dan menginterpretasikan hasil peramalan harga beli minyak mentah menurut *West Texas Intermediate* (WTI) berdasarkan fungsi tranfer *multi input* untuk masa mendatang.Penelitian ini menggunakan data sekunder dari kemenperin untuk harga beli minyak WTI (Z_t) sedangkan deret *input* nilai ekspor migas (X_{1t}) dan nilai impor migas (X_{2t}) diperoleh dari Bank Indonesia. Persentase validitas mencapai 83,33% dari hasil peramalan, sedangkan hasil peramalan 16,67% tidak valid. Berdasarkan analisis *trend* hasil peramalan yang valid yaitu pada bulan Februari, Maret, April, Mei, Juni, Juli, Agustus, Oktober, November. Sedangkan pada bulan September dan Desember *trend* hasil peramalan bertolak belakang dengan nilai aktual, sehingga dapat dinyatakan bahwa keseluruhan model valid.

Kata Kunci : Harga Beli Minyak WTI, Ekspor Migas, Impor Migas, Fungsi Transfer *Multi Input*

Khabibah Puspa Dela, 2019. **Modeling and Prediction of Oily Buy Prices *West Texas Intermediate* (WTI) with The Multi Input Transfer Function Approach** This final project is guided by Drs. H. Sediono, M.Siand Ir. Ir. Elly Ana,M.Si.,, S-1 Study Program of Statistics, Department of Mathematics, Faculty of Science and Technology, Airlangga University, Surabaya

ABSTRACT

The existence of petroleum will be able to influence the economic level of a country because this is because abundant petroleum can be exported to other countries so that it can increase per capita income in a country. The price of world crude oil is measured by the spot price of the world oil market, generally the price of oil used as the world standard price is West Texas Intermediate (WTI). The fluctuations in WTI oil prices along with several influencing factors, namely oil and gas exports and imports have always been regarded as economic barometers throughout the world, so that every change in oil prices has always been a hot issue to be discussed in political and economic circles in each country. The purpose of this study is to interpret the general description of the variables related to the purchase price of crude oil according to West Texas Intermediate (WTI) based on descriptive statistical analysis, estimating the crude oil purchase price according to West Texas Intermediate (WTI) based on the multi input transfer function for get the best model in forecasting and analyze and interpret the results of forecasting the purchase price of crude oil by West Texas Intermediate (WTI) based on the multi input transfer function for the future. This study uses secondary data from the Ministry of Industry for the purchase price of WTI oil (Zt) while the input series oil and gas export value (X1t) and oil and gas import value (X2t) are obtained from Bank Indonesia. The percentage of validity reached 83.33% from the forecasting results, while the forecast results of 16.67% were invalid. Based on trend analysis valid forecasting results, namely in February, March, April, May, June, July, August, October, November. While in September and December the trend of forecasting results contradicts the actual value, so it can be stated that the overall model is valid.

Keywords: Purchase Price of WTI Oil, Oil and Gas Exports, Oil and Gas Imports, Multi Input Transfer Functions.